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10/537,584	01/09/2006	Mara Destro	PP1-22811/CHM 124/PCT	4896
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EXAMINER				
EOFF, ANCA				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/537,584

Applicant(s)

DESTRO ET AL.

Examiner

ANCA EOFF

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-30 is/are pending in the application.
- 4a) Of the above claim(s) 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19, 20 and 22-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-856)
- _____ Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
_____ Paper No(s)/Mail Date _____
- 5) ☐ Notice of Inventor's Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 19-30 are pending in the instant application with claim 21 withdrawn from consideration. Claims 1-18 are canceled.
2. The foreign priority document No. 0228647.4 filed on December 9, 2002 in the United Kingdom was received and acknowledged.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 19-20 and 22-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19 refers to "protective clothing or mask or irradiation indicating tag" so it is not clear what subject matter is the applicant regarding as his invention. The claim should refer to only one of protective clothing, mask and irradiation indicating tag.

Claim 19 comprises the limitation "on visibly below the surface of the clothing or tag" so it is not clear what subject matter is the applicant regarding as his invention. Based on the disclosure in par.0106 of the specification of the instant application, the examiner interprets the limitation as "on or visibly below the surface of the clothing or tag".

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 19-20 and 22-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashihara et al. (US Patent 5,824,715) in view of Greer, IV (US Pg-Pub 2002/0057881).

With regard to claim 19, Hayashihara et al. disclose a marking composition comprising an energy ray curing resin and a leuco dye (abstract), equivalent to the color former of the instant application.

Hayashihara et al. further disclose that the composition may comprise an antioxidant (column 6, lines 19) but fails to disclose the type of antioxidant used in the marking composition.

Greer, IV discloses a radiation-curable coating composition comprising a dye or dye precursor (abstract), equivalent to the color former of the instant application, resins (oligomers A-E in table in par.0187) and antioxidants which minimize or even inhibit the destruction of the dye and the coating (par.0131). Preferred antioxidants include derivatives of phenol, such as tetrakis (methylene 3-(3', 5'-di-t-butyl-4'-hydroxy-phenyl propionate) methane (par.0143).

Therefore, it would have been obvious to one of ordinary skill in the art at the time to include a phenolic antioxidant, such as tetrakis (methylene 3-(3', 5'-di-t-butyl-4'-

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hydroxy-phenyl propionate) methane as disclosed by Greer, IV in the marking composition of Hayashihara et al., in order to minimize or inhibit the destruction of the dye and the coating (Greer, IV, par. 0131).

Hayashihara et al. further disclose that the marking composition is coated on a substrate to be marked, such as a plastic films (column 7, lines 6-23). The marking composition can be used for marking the maker's name, contents, date of production, lot number, etc. on the surfaces of the sheets, packaging sheets, cards, labels so a tag having the above-mentioned marking composition applied thereon is equivalent to the tag of claim 19 of the instant application.

The tetrakis (methylene 3-(3', 5'-di-t-butyl-4'-hydroxy-phenyl propionate) methane comprises four phenol moieties, each carrying one bond to a tetravalent alkyl group of 5 carbon atoms which is end-capped with -OCO- groups.

With regard to claim 20, Hayashihara et al. further disclose that the marking composition may be irradiated with excimer laser (column 7, lines 12). It is well-known in the art that a type of excimer laser is ArF excimer laser (193 nm), as evidenced by Hasebe et al. (US Pg-Pub 2001/0005619) in par.0084.

With regard to claims 22-23, the tetrakis (methylene 3-(3', 5'-di-t-butyl-4'-hydroxy-phenyl propionate) methane of Greer, IV is equivalent to the pentaerythritol tetra is (3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate) of the instant application and has a structure equivalent to the compound of formula (A), wherein $n=4$, R_2 and R_4 are tert-butyl group, R_3 and R_5 are hydrogen atoms and R_1 is a tetravalent group of 5 carbon atoms which is end-capped with -OCO- groups.

With regard to claim 24, Hayashihara et al. further disclose that the leuco dyes may be fluoran-type dyes (column 4, lines 45-55).

With regard to claim 25, Greer, IV discloses that the phenolic antioxidant is comprised in the radiation-curable composition in an amount of about 0.01wt% to about 7wt%, preferably 0.1wt% to about 1.5 wt% (par.0130)

With regard to claim 26-27, Hayashihara et al. further disclose that the leuco dyes are comprised in the composition in an amount between 7 and 45 wt.% , based on the energy ray curing resin (column 5, lines 1-4). However, Hayashihara et al. further disclose that if the amount of leuco dye is too small, it is impossible to obtain a clear-cut mark and if the dye is used in an excess amount, no further improvement of clearness of the mark formed is provided (column 4, line 65-column 5, line 1).

This shows that the amount of leuco dye in the marking composition of Hayashihara et al. is a result-effective variable and therefore is optimizable.

A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) (The claimed wastewater treatment device had a tank volume to contractor area of 0.12 gal./sq. ft. The prior art did not recognize that treatment capacity is a function of the tank volume to contractor ratio, and therefore the parameter optimized was not recognized in the art to be a result- effective variable.). See also *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) (MPEP 2144.05- II Optimization of Ranges)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the amount of leuco dye in the marking composition of modified Hayashihara, in order to obtain a clear-cut mark.

With regard to claims 28-29, Hayashihara et al. further disclose that the composition comprises polyester acrylate oligomers, equivalent to the polyacrylic polymeric material of the instant application.

7. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashihara et al. (US Patent 5,824,715) in view of Greer, IV (US Pg-Pub 2002/0057881) as applied to claim 19 above and in further view of Fujikura et al. (US Patent 5,030,548).

With regard to claim 30, Hayashihara modified by Greer, IV teach the method of claim 19 above (see paragraph 6 of the Office Action). The marking composition comprises radical polymerization type resins (column 3, lines 39-40), photo-initiators for curing the resin, such as benzophenone type initiators for radical polymerization (column 4, lines 25-26), leuco dyes (column 4, line 38), equivalent to the color former of the instant application and antioxidants (column 6, line 19).

Hayashihara et al. disclose that the marking composition may be exposed with energy rays, such as ultraviolet or electron beam (column 3, lines 32-34) but fail to disclose exposure with X-rays.

Fujikura et al. disclose a photopolymerizable composition comprising a polymeric binder, ethylenically unsaturated compounds, a photopolymerization initiator system comprising benzophenone and a leuco dye (abstract). The composition may be exposed with UV light, laser light, electron beams and X-rays (column 13, lines 10-16).

Since the marking composition of Hayashihara modified by Greer, IV and the photopolymerizable composition of Fujikura et al. are similar (comprise the same components), it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the teachings of Fujikura et al. and expose the marking composition of Hayashihara modified by Greer, IV with X-rays.

Hayashihara et al. further disclose that the developed color density of each exposed test piece is measured after irradiation/exposure (column 9, lines 59-63).

Response to Arguments

8. The rejection of claims 1-2 and 7-9 as being unpatentable over claims 1-10 of US Patent 7,264,916 is withdrawn following the cancellation of the claims.

The provisional rejection of claims 1-2 and 7 as being unpatentable over claims 1-3 and 5-6 of copending application 11/593,372 in view of Fujiakawa et al. (US Patent 5,698,373) is withdrawn following the cancellation of the claims.

The rejection of claims 1-3, 5-11, 17-18 under 35 USC 102 (b) over Fujikawa (US Patent 5,698,373) is withdrawn following the cancellation of the claims.

The rejection of claims 1-3, 5-6, 10-11 and 17 under 35 USC 102 (b) over Misura et al. (US Patent 5,770,115) is withdrawn following the cancellation of the claims.

The rejection of claims 1-3, 5-13 and 17-18 under 35 USC 103 (a) over Hayashihara et al. (US Patent 5,824,715) in view of Greer, IV (US Pg-Pub 2002/0057881) is withdrawn following the cancellation of the claims.

The rejection of claim 14 under 35 USC 103 (a) over Hayashihara et al. (US Patent 5,824,715) in view of Greer, IV (US Pg-Pub 2002/0057881) as applied to claim 12 and in further view of Fujikura et al. (US patent 5,030,540) is withdrawn following the cancellation of the claim.

The rejection of claim 16 under 35 USC 103 9a) over Roberts (US Patent 4,540,746) in view of Spivack et al. (US Patent 3,935,163) is withdrawn following the cancellation of the claim.

9. Applicant's arguments with respect to claims 19-20 and 22-30, filed on April 16, 2008, have been considered but are moot in view of the new grounds of rejection.

On page 17 of the Remarks, the applicant argues that Hayashihara et al. and Greer require UV curing to arrive at a solid product and that the combination of references do not give an "irradiation indicating tag" as in claim 19 of the instant application.

The examiner would like to point out that the tag of the instant applicant function/use as "irradiation indicating tag" is only an intended use and adds no patentable weight to claim 19.

If the body of a claim fully and intrinsically sets forth all of the limitations of the claimed invention, and the preamble merely states, for example, the purpose or intended use of the invention, rather than any distinct definition of any of the claimed invention's limitations, then the preamble is not considered a limitation and is of no significance to claim construction. *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165 (Fed. Cir. 1999). See also *Rowe v. Dror*, 112 F.3d 473, 478, 42 USPQ2d 1550, 1553 (Fed. Cir. 1997) ("where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention, the preamble is not a claim limitation"); *Kropa v. Robie*, 187 F.2d at 152, 88 USPQ2d at 480-81 (preamble is not a limitation where claim is directed to a product and the preamble merely recites a property inherent

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in an old product defined by the remainder of the claim) (MPEP 2111.02- II. Preamble Statements Reciting Purpose or Intended Use)

The composition of Hayashihara modified by Greer comprises the same compounds as the tag of the instant application (a polymeric material applied as a film on a substrate to be marked) so it meets the limitation of the claim.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANCA EOFF whose telephone number is (571)272-9810. The examiner can normally be reached on Monday-Friday, 6:30 AM-4:00 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/A. E./

Examiner, Art Unit 1795

/Cynthia H Kelly/

Supervisory Patent Examiner, Art Unit 1795